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J. W. P. JENKS, EDITOR OF THIS NUMBER.

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THE STUDY OF NATURAL HISTORY.

It is an obvious fact that our snorting iron-horses, thundering steamboats, and lightning post-routes, are waking up the senses of seeing and hearing, to such an extent, that the giant intellects of the present day are everywhere rubbing off the scales of metaphysical abstractions, and swiftly forming upon the battle-ground of physical and natural science, to fight the great battle of the *evidences*. To paraphrase a quotation from Hugh Miller, "the Lockes, Humes, Kents, Dugald Stewarts, Thomas Browns, and Edwardses, belong to the past,—and the philosophers of the present time, tall enough to be seen all the world over, are the Humboldts, the Aragos, the Agassizes, the Liebig's," the Hares, the Henrys, the Hitchcocks and the Guyots,—men, who are searching for fact, and carefully holding themselves aloof from bias, deduce conclusions from the tangible convictions of experimental demonstration. Their postulates even are subjected to the strictest scrutiny, that nothing may be taken for granted, but every thing become assertion only upon the incontrovertible evidence of the senses. Infidelity battered, bruised, crushed in her encounter with the evangelical of the former class, has hydra-like arrayed herself in opposition to the evangelical of the latter class, and with a bolder front, and, if possible, a more hideous, as well as assuredly more seductive form, challenges the combat. The generals, marshals, subalterns, and even private soldiers, are already enrolled on the side of infidelity—a mighty army—and "telling so widely on society, that one can scarce travel by railway or in a steamboat, or meet a group of intelligent mechanics, without finding decided trace of its ravages." As

stated by the author of the Foot-prints of the Creator, "the "great antagonist" points in the array of the opposite lines, are simply the law of development *versus* the great miracle of creation." The infidel philosopher of the present day, flinging away all metaphysical speculations and mystifying language, steps up to a plain, unsophisticated, but practical mind, and placing before him an egg, appeals to the evidence of his sight, and inquires if he sees in it anything like a *chicken*. No! is the ready response. He places the egg in an eccaleobion, and ere long shows his dupe a chicken, and then asks again, if he sees in this unfledged peeper, the feathered fowl, or hears the stentorian voice of the vociferous chanticleer. No! He gives food, and ere long the down of puberty becomes the coarse feather of maturity, and the peep of infancy, the stentrophonic note of age. Now appealing to the wonder excited in the hitherto unsophisticated observer of these phenomena, he next inquires, with an air of triumph, "And now what do you think?" "Why! I must believe the evidence of my senses," is the reply, and thus having put his victim off his guard by this physical demonstration, in which, however marvellous the process, he is not accustomed to observe in any of its stages the slightest mixture of miracle, the pseudo-philosopher reverses the order of illustration and substitutes man as a species as the example, and says, "Do you observe how slight the difference between men and monkeys?" Well, this is only the accident of adventitious circumstances. But do you see how nearly allied the monkey is to the squirrel, and the squirrel to a bat, and the bat to a bird, and the bird to a reptile, and the reptile to a fish, and the fish to an oyster, and the oyster to a microscopic monad, and in *it*, you find the germ of the human race, just as you found the yolk of the egg, concealing the embryonic chicken. That is to say, "whatever is created is microscopic; and whatever is not microscopic, is not created," but developed: i. e., man, *as such*, has not been created, but developed, during the long geologic periods,—the changes from the original microscopic monad, which only some of these infidels will allow to have been created, having been so gradual, and, as it were, imperceptible, that, in process of time, some one individual of each species, has, under the power of a concurrence of circumstances, changed into a higher order, and propagating that new species, in process of time, some one individual of it has in like manner, *naturally*, they say, developed into a higher order still, and so on till the grade of man has been attained to, just as all the varieties of the human race have been produced by casual circumstances, *all*, as is conceded, having sprung from one original pair. In an address delivered not long since, before the St. Andrew's Horticultural Society, there

occurs the following passage, as quoted by Hugh Miller: "Life is governed by external conditions, and new conditions imply new races; but then, as to their *creation*, that is the '*mystery of mysteries*.' Are they created by an immediate fiat and direct act of the Almighty? or has he originally impressed life with an elasticity and adaptability, so that it shall take upon itself new forms and characters according to the conditions to which it shall be subjected? Each opinion has had and still has its advocates; but the truth is, that *science*, so far as it knows, or rather so far as it has had the honesty and courage to avow, has yet been unable to pronounce a satisfactory decision. *Either way it matters little, physically or morally*; either mode implies the same omnipotence and wisdom, and foresight and protection; and it is only your little religious sects and scientific coteries which make a pother about the matter,—sects and coteries, of which it may be justly said, that they would almost exclude God from the management of his own world, if not managed and directed in the way that they would have it." At first blush, this doctrine does not seem to be atheistic, because it acknowledges a Creator, and appeals to the opponent to say, why the First Great Cause might not as certainly have originated the human species by a law of development, as to maintain it by a law of development, which latter none will deny as long as man is observed to be born in an immature state, and growing up from infancy to childhood, and childhood to youth, and youth to manhood.

"But," to quote again from the Foot-prints of the Creator, "there are certain beliefs," [into the enumeration of which we will not enter at this time,] "which are as important to the moralist and Christian, as a belief in the existence of a God, but which seem wholly incompatible with the development hypothesis."

Such is in brief the threatening storm to be provided against. *Threatening!* may it not be said to have already burst upon us? Institute an inquiry in our Colleges, Academies and High Schools, and even a cursory examination will suffice to prove that infidelity in this insidious form, is entrenching itself and sapping the foundations of our literary society, and though there may be no hope of finding a shelter from the storm, except under the covert of true Christianity, as science-enlightened France, groaning under the yoke of civil discord, will testify, yet knowledge is the handmaid of religion, and sustains so intimate a relation to it, that while knowledge may exist without religion, religion does not exist as a *national* blessing without knowledge. We flatter ourselves, as a nation, that we have had the former transplanted to our shores through the agency of our forefathers; but that it may take root and grow with our

national growth, and strengthen with our national strength, we must supply the soil congenial to its growth, and recruiting to its strength.

And, too, as infidelity has now entrenched herself upon the battle-ground of Natural History, thither we must repair, and attacking her in her very entrenchments, dislodge and destroy, ere she shall have allured to her standard so many of our fellow-citizens and youth, that numbers shall absolutely control us.

Hence the great argument in favor of introducing the study of Natural History into our common schools as a branch of elementary education—this, the moral and religious argument; since to it infidelity hath fled for a refuge, and will, ere long, recruited and replenished, dart forth from her lurking place, prepared to scatter broadcast the seeds of an error, far more subtle and insinuating than any whose instrumentality she has heretofore employed.

Nor avails it to imagine that we are by these expressions, sounding the note of false alarm. What teacher of an Academy or High School, has not been called upon by his pupils to reconcile Geology and Genesis, death as an inevitable consequence of physical life and as a consequence of Adam's transgression, or the Noachian Deluge and the preservation in the ark of all animal existences? The present is emphatically the *observing* age, in which the works of nature are taken up, as it were, one by one, and turned over and scrutinized cursorily and microscopically, as never before during the historic period. Nor is this recent mode of investigating peculiar to any one branch of natural science. How remarkable that thirty-eight years should have elapsed between the discovery of the fourth and the fifth asteroid, and only eight years between the discovery of the fifth and the twenty-sixth of that remarkable group. And what may we not expect to have speedily unfolded to the eye, by the microscope, when the greatest artists in the world are vying with each other in producing the finest instruments, and the greatest naturalists of the age have ceased almost entirely the examination of nature in its grosser forms, and are employed in the inspection of its elementary arrangements? But while this mode of investigation is doubtless the only philosophical one,—promising truthful results,—yet we seem to see in it, a new cause for alarm, when considering its moral bearings. An inclination to the *marvellous* is so natural to the human mind, that whatever challenges belief, by concealment of a part on the ground of its being invisible, or perhaps incomprehensible, while enough is manifest to give assurance of some reality, is much more likely to be readily adopted by the mass, than as though every thing was plainly perceived and comprehensible. Therefore microscopical examinations afford a

better opportunity to the mere theorist to palm off his views under cover of that concealment which the nature of the case furnishes to him. Let, then, men of known integrity enter the lists and meet the atheistic observer, who fancifully speculates upon the embryonic development, as though it had the claim of an ocular demonstration. We count it happy for science and religion, that in this country, at least, such men are already in the field of investigation, and in the front rank too, men of acknowledged superiority, who, while they pry with curious eyes into the innermost recesses of nature's workshop and make bold to handle, so to speak, her crude and immature forms, still are content to believe "that the evidences of Christianity, and the narratives of the Gospel, are to be judged by the laws of historical evidence, from consciousness and testimony; and that the natural sciences have nothing to do with the subject, except as they modify in other ways our history and psychology." Men of such scientific skill, however, are seldom capable of presenting the results of their investigations, in a way such as to attract and inform the uninitiated mass who have never learned the alphabet of Natural History, in the examination of her more common and grosser forms. Let the child, however, be introduced to the study in the primary school—let it there be taught to observe for itself the more obvious presentations of nature, and thus acquire both the habit of observing and a skill *in* observing, and in maturer age he will be well prepared to follow the guidance of an Agassiz, through his explorations of embryonic life, until he can recognize an animal or a plant in any stage of its growth, "from the earliest germ to the latest decay."

Again, we argue the utility of the study of Natural History, more particularly in our primary schools, as a means of employing the minds of young pupils far more profitably than, as heretofore, in the study of abstractions. Is it not an obvious fact, well asserted to by every experienced teacher, that, as an average, those pupils who absolutely commence the study of Arithmetic and Grammar as late as their eleventh or twelfth year, at fourteen are as proficient in these branches as their companions of the same age, who have been delving into them from the period of six or eight? Why then persevere in a system of training that evidently is unnatural, not to say stultifying? especially when there is no longer the excuse that elementary text-books upon this subject are not to be found; though we should much prefer that the teacher would abjure the use of all text-books, in the earlier stages of imparting instruction in this science, until the natural enthusiasm of the child is aroused, and he comes to the investigation from a love for the study. Its knowledge being communicated through the senses, it best accords with the immature powers of the very young child, who

cannot, however, fail to cultivate the reflective faculties to a reasonable extent, as the multiplied forms of animal and vegetable existence are presented to his eye, and suggest naturally a comparison of their distinctive differences and mutual relations. Again, how desirable that the *unnatural* horror at a view of some of the specimens of Natural History with which most are impressed, should be worked out of the mind!—a horror most wickedly instilled in the nursery, and, from the immoral tendencies therein involved, doubtless exerting an influence upon the future character of the child, little appreciated, but nevertheless exceedingly potent. Dare any one say that the apparently instinctive tendency of some lads, to hector and worry their companions, is not the result of a bias, formed in the nursery or infant school, by being taught to regard every species of reptile and bug as an object to be abhorred, which under the influence of this training freely indulges the destructive propensity, until, from tormenting the lower forms of animal life, it displays itself in an utter disregard of the great law of reciprocity, as obtaining in human society?

Again, how extensive the use, every man in common life has, of a knowledge of Natural History. To take an extreme case: Place two men, according to the suggestion of an old Grecian philosopher, upon an uninhabited island, and let one be familiar with the common productions and laws of nature, and the other not, and which would have the advantage? Why, the one would gather his means of sustenance from every source,—the land and the water,—while the other would perish in the midst of profusion, either from fear of noxious qualities, or from a want of knowledge sufficient to discriminate between the noxious and the innoxious.

But lastly, the importance of this study may be peculiarly illustrated by allusions to the extensive moral influence it would have upon mankind, not merely as human and exposed to the shafts of infidelity, but as endowed with versatility and pliancy of mind. In the language of Agassiz, "Unless we study nature extensively, we remain almost strangers to the wonders of the universe; we remain unconscious of the beautiful harmony there is in creation; we fail to perceive distinctly that there is in nature a revelation of the Supreme Intelligence, which teaches us that every thing has been done with order, with a view to a plan, and with reference to the creation of that privileged being, to whom God has revealed himself in another manner; it is the fact that the revelation of God in nature, the manifold manifestation of his power, his wisdom, his intelligence, which are displayed throughout nature, remain a sealed book to those who are not early taught to read it, or they remain as a sort of undeciphered hieroglyphics, which man may easily misinterpret from

want of a sufficient knowledge of the characters in which they are written."

Finally we quote the beautiful language of Bryant in his *Thanatopsis*.

"To him who in the love of nature holds
Communion with her visible forms, she speaks
A various language; for his gayer hours
She has a voice of gladness, and a smile
And eloquence of beauty, and she glides
Into his darker musings, with a mild
And gentle sympathy, that steals away
Their sharpness, ere he is aware."

EXTRACTS FROM AN ADDRESS ON PHYSICAL EDUCATION,

DELIVERED BEFORE THE PLYMOUTH COUNTY TEACHERS' ASSOCIATION, DEC. 25, 1852, BY HON. WM. H. WOOD, OF MIDDLEBORO'.

THE causes of our physical infirmities are very obvious. They result from a violation of the laws of health and life. In our physical constitution, as in all other respects, we are "made under the law,"—natural laws inherent in our constitution,—as fixed and immutable as the laws which wheel the planets in their course. When we obey, health and long life are the reward of obedience. When we disobey, disease and premature death are the penalties of disobedience. When we see our young men, in the morning of life, bowed down with bodily infirmity; when we see those of the other sex, "in the beauty and hope of life," fading away beneath the hand of that insidious disease, which, in this state, in every day, of every year, deprives more than seven human beings of their lives, by far the greater proportion being from this class of our population,—we may know that these are penalties of violated law,—not always violated by the suffering individual, for the stream of life is continuous, from its source to its termination, and disease, as well as health, is transmitted from parent to child. When we see an individual, as we now and then do, who through a long life enjoys almost uninterrupted health, and finally descends to the tomb, with serenity and composure, from mere decay and exhaustion of the human frame, incident to old age, we know that this result takes place through the agency of fixed law, for chance has no place in the economy of Providence. On the other hand, when we find it recorded, that in England, the annual average number of deaths from disease is 300,000, while that from mere decay from the progress of time, is only 35,000, we see how general is the disregard of the laws of life; so, too,

the great fact, that as nearly as can be ascertained from our registration reports, the deaths from old age, in Massachusetts, are only seven per cent. of the whole number, teaches us the same lesson.

As, then, we find the cause of our physical deterioration in the violation of the laws of health, our remedy for this evil is a return to obedience. This way safety lies. Perfect obedience would be attended with perfect health, and with all the vigor and beauty of which the human constitution is susceptible; and just so far as we remain obedient, shall we approximate this perfect result. Progress, however, must be gradual. The sins of the father are visited upon the children, even unto the third and fourth generation, and our return must be through the same path by which we came. Not in one generation can the dwarfed stature regain its full height and symmetrical proportions, or the contracted chest regain its full expansion. More time is requisite to raise and expand what Shakspeare calls, "the villainous low forehead," and give breadth and harmonious proportion to the dome of thought, than was required to "round St. Peter's dome," a century though that was in building.

This, then, is physical education, which has been so much neglected in Massachusetts, and the effects of which we are now experiencing. Its object is to bring the subject of this education into harmony with the laws impressed upon his physical constitution by his Creator; to give to the body all the health and fulness of life of which it is susceptible; to enable man to withstand all the adverse influences that may surround him, change of climate, the vicissitudes of the seasons, and "the pestilence that walketh in darkness." A person in full health who is obedient to the laws of life will withstand all the approaches of disease as surely as a moral and religious man will withstand the assaults made upon his moral nature. When the pestilence rages, and death seems to be borne upon the breezes of heaven, why does one stand while others fall? The religious man says that it is an overruling Providence, who spares whom he will. The physiologist says that it is the action of fixed law, which protects those who are obedient to it. The Christian philosopher says that it is *both*,—Providence acting through his laws. Wellington, the Iron Duke, as he was called, apart from the dangers incident to the profession of arms, was exposed to all the perils of disease attendant on frequent change of climate, and the fatigue and exposure of a soldier's life. Yet while thousands fell around him, he walked unharmed and maintained his vigor of body until near the close of his long and eventful life. The object of physical education is to give this vigor of body to all; to cause health to reign

where disease has prevailed; to dry up the streams by which our hospitals, our lunatic asylums and schools for idiots are supplied.

This subject appeals to far higher sentiments than self-love, and extends much beyond the present generation. In this respect, as in all others, we live for the future. The influence of to-day, is felt far down the stream of time. As we are sharing in the rewards and penalties affixed to the action of those who have gone before us, so shall we transmit a portion of the good or evil connected with our conduct to those who shall come after. In respect to the physical laws, "the good which men do, lives after them," and "the evil is" *not* "interred with their bones." Although the doctrine of supererogation, that a man may do good work enough for his own salvation, and have something over which may be set to the account of others, is not true in morals, it seems in some sense true, in regard to the physical laws. We sometimes see a man who seemingly disregards nearly all the laws of his being, and still remains in comparative health. Such instances are sometimes adduced to prove that there are no fixed laws of life. But although such an individual does not obey the laws, his ancestors did, and thus laid up for him a fund of health and vigor which was transmitted to him in his own constitution, a richer legacy than coffers filled with gold; and upon this fund he has been continually making drafts. The present generation is sowing the seeds of health or disease, which shall bear an abundant harvest, to be gathered by those that succeed.

The reasons which give importance to the subject of physical education, commend themselves particularly to teachers. Through their influence and their labors must this work be carried forward in Massachusetts. The law has thrown a responsibility upon them, by requiring that they qualify themselves for this work. Were the 6,700 teachers of our state to engage in this work with zeal, one generation of children should not pass through our schools without great results. Those instrumental in producing such results should be ranked amongst the greatest benefactors of the race. If he is a benefactor who founds hospitals for the relief of the poor, the diseased, and the insane, much more are those, who, having wisdom for such a work, ascend to the head waters of the stream of life, and purify the fountain, whence flow those streams of pauperism, insanity and death.

When the young man finds himself wasting away under the hand of disease, he would give all that he possesses, could he woo back the goddess of health to his side. When the fond mother bends over the frail child, whose life seems fast waning away, she would give worlds could she plant the roses of health

in that wan and fading cheek. It is now too late. But could such "remount the river of life," and with the eye of science examine its course, they would find the point where the bitter waters of disease first mingled with the stream, and where the hand of precaution might have checked their flow, and the evils which cannot be removed might have been prevented. But through ignorance and neglect, such precaution was not used. It is yours to give such instruction and training, that the causes of these evils may be guarded against, ere their sad and fatal results are experienced, and the future shall be made more happy than the past, through your labors.

EXTRACT FROM AN ADDRESS ON THOROUGH-
NESS OF EDUCATION,

DELIVERED BEFORE THE PLYMOUTH CO. TEACHERS' ASSOCIATION, JUNE 11, 1853, BY REV. J. P. TERRY, OF SOUTH WEYMOUTH.

THE youth of our land need a thorough moral as well as intellectual training. Man has conscience and heart as well as intellect, and the former need culture no less than the latter. The true idea of education is the development of all the faculties of the soul; and in proportion as any part is neglected, is the education incomplete, and the character formed imperfect. And it is only by a symmetrical development of the *whole*, that any *one* part can attain to its full growth. Cultivate the intellect as assiduously as you can, provide schools in which the utmost that human science *can* do, *shall be* done for invigorating its powers and enlarging its capacities; and yet, if you neglect moral and religious culture, you withhold what is better adapted than any thing else to its expansion and growth, and so prevent its perfect development. Religion is the great want of the human mind. The sublime truths which have to do with the conscience and the heart, meet also the highest demands of the intellect, and furnish it with its most substantial and invigorating aliment, and are therefore essential to its full development. And on the other hand, some degree of intellectual culture is indispensable to the apprehension and application of those truths and principles of religion on which the cultivation of the moral nature depends. No system of education, then, is complete, which does not provide for moral and religious, as well as intellectual training. But if either must be neglected, it should be the latter. If there must be a defect anywhere in education, for the good of the individual, and of society, let it not be in respect to the conscience and the heart. The evils resulting from a defective mental culture are infinitely less than those which follow a de-

fective or vicious moral training. And yet, is not more attention paid at the present day to intellectual than to moral culture? And is it not the great defect in our common schools, that too much is made of the intellect in them, and too little of the heart? The cultivation of the intellect is the great object sought, both by parents and teachers, and the moral nature receives but comparatively little attention. But is this right? Does it accord with the intentions of our Creator, as disclosed by the constitution of our being, and as expressed in his word? Does not the heart *need* culture as well as the intellect, and is it not equally *capable* of it? Are not the teachings of God's word, and the lessons of his providence as wisely adapted to the moral as to the intellectual part of our nature,—and so proof that he has as high a regard for the improvement of the former as of the latter? And shall we disregard his intentions, and make the intellect everything and the heart nothing? And by such a system of education can we expect the rising generation to be qualified to fill the places of their fathers, maintain the institutions which are the glory of our land, and uphold the pillars of this free republic? If there be any lesson taught by history, it is that mere knowledge never qualifies men for self-government, and that republican institutions cannot long stand, which are not founded upon public virtue. The ancient republics fell into the graves dug by their vices, while knowledge in them was at its greatest height. Intelligence among a people is an element of power, but unless guided by principle it will prove a demon of instruction. The great pillars of our republic are intelligence and virtue. Neither can be removed, and the edifice stand. Our national existence, then, depends upon the right moral as well as intellectual training of the rising generation; and hence it is important that along with the other instruction given in our common schools there be taught the principles and precepts of Christian morality. I say Christian morality, because Christianity is not only the true religion, but is also the recognized religion of the land. Its morality, therefore, and not the morality of any foreign or false religious system, should be inculcated in its schools of learning. It was one object of our fathers, in establishing public schools, to provide for the moral and religious training of their children; and they required not only the Bible but a religious creed to be taught in them. On account of the great diversity of religious sentiment prevailing among the people at the present time, the state has wisely excluded from the schools distinctive creeds. Still it has not banished religion from them, nor forbidden in them the culture of the heart along with that of the intellect. It enjoins it as a duty upon all “preceptors and teachers of academies, and all other instructors of youth, to exert their best endeavors to impress on the minds of children

and youth committed to their care and instruction the principles of piety, justice and a sacred regard to truth, love to their country, humanity and universal benevolence, sobriety, industry and frugality, chastity, moderation and temperance, and those other virtues which are the ornament of human society, and the basis upon which a republican constitution is founded." Thus the laws of the Commonwealth not merely *allow*, they *require* moral as well as intellectual training in the common school. They do not simply accord it to teachers as a *privilege*, they enjoin it upon them as a *duty*, to "inculcate piety and Christian morals, love to God and love to man." "Massachusetts," says the Secretary of the Board of Education, "holds that religion is the highest and noblest possession of the mind, and is conducive to all the true interests of man and society, and therefore she cannot do otherwise than seek to place her schools under its beneficent influence." So far, then, as the State requires religious instruction to be given in the common school, it should not be withheld. And any attempt to divorce religion from learning, to exclude the Bible from schools or prohibit the inculcation in them of those principles of virtue and religion which the State has pronounced to be essential to her welfare, should be met with the most determined resistance.

PREPARATION OF SPECIMENS OF NATURAL HISTORY.

IN looking over the indexes of the past numbers of the "Teacher," we have been much surprised to find it utterly destitute of all allusion to the study of Natural History since the first number of volume 3d, January, 1850, edited by Prof. Agassiz. In that number, however, we find so able an article upon the subject, from the pen of the distinguished editor, that we questioned much, whether we could better serve the cause of education, than by republishing the article entire, as an atonement for the neglect shown to this important branch of elementary education during the three and a half years of our utter silence upon the subject.

We have, however, concluded, though reluctantly, to content ourselves with calling the attention of our brother teachers to the article, and exhorting to a fresh perusal, and a determination to put its most excellent suggestions into practice.

On page 28 of the same number, we find also an unacknowledged article, entitled "Some Hints on making collections for the use of Schools," which from its eminently useful suggestions deserves a more exalted title than "*hints*;" and we sincerely

hope this allusion to both articles, will stir up the *practical* readers of the Teacher, to a careful reperusal of that Number.

It is gratifying to know that the study of Natural History as a science, is gradually incorporating itself into our system of elementary instruction, and promises ere long to be a constituent part of it. This indication is most clearly manifested in the fact that organizations for the promotion of this end, are being formed in at least some of our *country* towns—thus entering upon the study in the *natural* field for it, where the objects of its investigation are presented fresh to the hand for examination. Cities are *artificial*—the country only is *natural*. And to awaken an enthusiasm which shall interest every separate town in the Commonwealth, in the study of its individual natural history, there needs, we think, only a little effort on the part of the permanent teachers. In every community, enough of the constant residents can be found, who would aid by a small contribution, in furnishing the necessary boxes and jars for preserving the specimens, and if School Committees would, at the examination of teachers, merely suggest to them to send to the place of deposit, whatsoever might fall into their hands, the natural history of the town in respect to its grosser character, at least, must, in a few years, be collected ready for examination in detail by some distinguished naturalist, who might thus easily make out the survey of the entire state. Indeed, would the state secure a topographical survey of its natural history, it suggests itself to us as the most economical, as well as feasible plan, to have the Legislature appoint a practical lecturer, who should visit every town and spend three days in the principal village of each, giving explicit directions as to how specimens may be preserved, and who, by constant correspondence, should for *five* years afterwards endeavor to keep up the interest in collecting and preserving, in the expectation that at the end of that time he would make a personal examination of each town collection, and thus secure the material for a more extensive and accurate report than could possibly be obtained in any other way. Such a collection, the town of Bridgewater is making for itself, through a definite organization of the citizens, and we trust their worthy example may be speedily followed by many other towns. In some, however, private individuals are doing the same thing, which doubtless is the course most certain of success.

As an encouragement, let it be remembered that every town has a natural history in some particulars peculiar to itself.

And this is the first idea to be, as it were, indelibly impressed,—that a town collection far transcends in interest a foreign collection, and, in the present state of the diffusion of a knowledge of the Science would be to most of the *residents*

quite as surprising as well as interesting, as a cabinet of specimens from abroad. Indeed, the writer has been greatly astonished at the ignorance of many men, upon this subject, though reputed as men of acute observation as farmers. An individual is rarely met with in this vicinity, who, if he pretend to any information at all upon the subject, is not fully persuaded that the whippoorwill and nighthawk are the same bird, or that moles are exceedingly injurious to vegetation, and the country abounds in poisonous serpents. But let a little more knowledge be diffused, respecting the habits of birds, and specimens of all that are known to breed within the limits of any town be preserved in its cabinet, merely as stuffed skins unmounted or in alcohol, and our legislators would soon revoke some of the present foolish laws, designed to preserve certain birds from the fowler, by limiting the time when they may be secured to certain months, since to one at all familiar with the habits of birds, it is a well known fact that certain birds cross the state northwardly during the restricted months, and might be sought for in vain during the unrestricted months. But our design in commencing this article was only to introduce an extract from Prof. Baird's "Directions for preserving specimens of Natural History," as published under the patronage of the Smithsonian Institution, hoping its publication in this journal may induce some individuals to attempt the practice of taxidermy, at least to the preserving of unmounted skins of birds and animals.

§ I. INSTRUMENTS, PRESERVATIVE MATERIALS, &C.

1. IMPLEMENTS FOR SKINNING.

The implements necessary in skinning vertebrated animals are : 1. A knife, such as is used for ordinary dissection, and which may be replaced in extreme cases, by a penknife. 2. A pair of sharp-pointed scissors, and one with strong, short blades. 3. Needles and thread for sewing up the incisions in the skin. 4. A hook by which to suspend the carcass of the animal while the operation of skinning is going on. To prepare the hook, take a string, of from one to three feet in length, and fasten one end of it to a stout fish-hook which has had the barb broken off. By means of a loop at the other end, the string may be suspended to a nail or awl, which, when the hook is inserted into the body of an animal, will give free use of both hands in the operation of skinning.

2. PRESERVATIVES.

The best material for the preservation of skins of animals consists of powdered arsenious acid, or the common arsenic of the shops. This may be used in two ways, either applied in dry powder to the moist skin, or else mixed with alcohol or water to the consistency of molasses, and put on with a brush. To the alcoholic solution should be added a little camphor. There are no satisfactory substitutes for arsenic ; but, in its entire absence, corrosive sublimate, arsenical soap, camphor, alum, &c., may be employed.

The proper materials for stuffing out skins will depend much upon the size of the animal. For small birds and mammalia, cotton will be found most convenient; for the larger, tow. For those still larger, dry grass, straw, sawdust, bran, or other vegetable substances, may be used. Whatever substance is used, care must be taken that it be perfectly dry. In no event should animal matter, as hair, wool, or feathers, be employed.

§ II. SKINNING AND STUFFING.

1. BIRDS.

Whenever convenient, the following notes should be made previous to commencing the operation of skinning, as they will add much to the value of the specimens:—

1. The length, in inches, from tip of bill to the end of the tail; the distance between the two extremities of the outstretched wings; and the length of the wing from the carpal-joint. The numbers may be recorded as follows: 44, 66, 12, (as for a swan,) without any explanation; it being well understood that the above measurements follow each other in a fixed succession. These numbers may be written on the back of the label appended to each specimen.

2. The color of the eyes, that of the feet, bill, gums, membranes, caruncles, &c.

3. Are the heels covered or uncovered by the feathers of the belly?

4. Attitude of the body when at rest, whether vertical, oblique, or horizontal. Does the bird perch or not?

5. Position of the wings, whether supported or hanging, crossing on the tail or not. Are they continuous and covered by the feathers of the mantle (back) and breast for the upper third, the half, or the two-thirds of their length? Their extremity; does it reach the end of the tail, the half, or the fourth of its length? The three last points will be of great use in mounting the specimens.

Immediately after a bird is shot, the holes made by the shot should be plugged up, and the mouth and posterior nostrils plugged with cotton to prevent the escape of blood and the juices of the stomach. A long narrow paper cone should be made; the bird, if small enough, thrust in, head foremost, and the open end folded shut, taking care not to break or bend the tail feathers in the operation.*

When ready to proceed to skinning, remove the old cotton from the throat, mouth, and nostrils, and replace it by fresh. Then take the dimensions from the point of the bill to the end of the tail, from the tip of one wing to that of the other, when both are extended, and from the tip of the wing to the first or carpal-joint, as already indicated.

This being done, make an incision through the skin only, from the lower end of the breast bone to the anus. Should the intestines protrude in small specimens, they had better be extracted, great care being taken not to soil the feathers. Now proceed carefully to separate the skin on each side from the subjacent parts, until you reach the knee, and expose the thigh; when, taking the leg in one hand, push or

* Crumpled or bent feathers may have much of their elasticity and original shape restored by dipping in hot water.

thrust the knee up on the abdomen, and loosen the skin around it until you can place the scissors or knife underneath, and separate the joint with the accompanying muscles. Place a little cotton between the skin and body to prevent adhesion. Loosen the skin about the base of the tail, and cut through the vertebræ at the last joint, taking care not to sever the bases of the quills. Suspend the body by inserting the hook into the lower part of the back or rump, and invert the skin, loosening it carefully from the body. On reaching the wings, which had better be relaxed previously by stretching and pulling, loosen the skin from around the first bone, and cut through the middle of it, or, if the bird be small enough, separate it from the next at the elbow. Continue the inversion of the skin by drawing it over the neck, until the skull is exposed. Arrived at this point, detach the delicate membrane of the ear from its cavity in the skull, if possible, without cutting or tearing it; then, by means of the thumb-nails, loosen the adhesion of the skin to the other parts of the head, until you come to the very base of the mandibles, taking care to cut through the white nictitating membrane of the eye when exposed, without lacerating the ball. Scoop out the eyes, and, by making one cut on each side of the head, through the small bone connecting the base of the lower jaw with the skull, another through the roof of the mouth at the base of the upper mandible, and between the jaws of the lower, and a fourth through the skull behind the orbits, and parallel to the roof of the mouth, you will have freed the skull from all the accompanying brain and muscle. Should anything still adhere, it may be removed separately. In making the two first cuts, care must be taken not to injure or sever the zygoma, a small bone extending from the base of the upper mandible to the base of the lower jaw-bone. Clean off every particle of muscle and fat from the head and neck, and, applying the preservative abundantly to the skull, inside and out, as well as to the skin, restore these parts to their natural position. In all the preceding operations, the skin should be handled as near the point of adhesion as possible, especial care being taken not to stretch it.

The next operation is to connect the two wings inside of the skin by means of a string, which should be passed between the lower ends of the two bones joining the forearm, previously, however, cutting off the stump of the arm, if still adhering at the elbow. Tie the two ends of the string so that the wings shall be kept at the same distance apart, as when attached to the body. Skin the leg down to the scaly part, or tarsus, and remove all the muscle. Apply the arsenic to the bone and skin, and, wrapping cotton round the bone, pull it back to its place. Remove all the muscle and fat which may adhere to the base of the tail or the skin, and put on plenty of the preservative wherever this can be done. Lift up the wing, and remove the muscle from the forearm by making an incision along it, or, in many cases, the two joints may be exposed by carefully slipping down the skin towards the wrist-joint, the adhesion of the quills to the bone being loosened.

The bird is now to be restored to something like its natural shape by means of a filling of cotton or tow. Begin by opening the mouth and putting cotton into the orbits and upper part of the throat, until these parts have their natural shape. Next take tow or cotton, and, after making a roll rather less in thickness than the original neck,

put it into the skin, and push firmly into the base of the skull. By means of this, you can reduce or contract the neck if too much stretched. Fill the body with cotton, not quite to its original dimensions, and sew up the incision in the skin, commencing at the upper end, and passing the needle from the inside outwards; tie the legs and mandibles together, adjust the feathers, and, after preparing a cylinder of paper the size of the bird, push the skin into it so as to bind the wings closely to the sides. The cotton may be put in loosely, or a body the size of the original made by wrapping with threads. If the bird have long legs and neck, they had better be folded down over the body, and allowed to dry in that position. Economy of space is a great object in keeping skins, and such birds as herons, geese, swans, &c., occupy too much room when all their parts are in a natural position.

In some instances, as among the ducks, woodpeckers, &c., the head is so large that the skin of the neck cannot be drawn over it. In such cases, skin the neck down to the base of the skull, and cut it off there. Then draw the head out again, and, making an incision on the outside, down the back of the skull, skin the head. Be careful not to make too long a cut, and to sew up the incision again.

2. MAMMALS.

The mode of preparing mammals is precisely the same as the preceding, in all its general features. Care should be taken not to make too large an incision along the abdomen. The principal difficulty will be experienced in skinning the tail. To effect this, pass the slip-knot of a piece of strong twine over the severed end of the tail, and fastening the vertebræ firmly to some support, pull the twine towards the tip until the skin is forced off. Should the animal be large, and an abundance of preservative not at hand, the skin had better remain inverted. In all cases, it should be thoroughly and rapidly dried.

Skins may also be preserved, for a time, in spirits, in the absence of other preservative. This would, at all events, be better than their drying, especially in localities abounding in noxious insects.

For the continued preservation of hair or fur of animals against the attacks of moths and other destructive insects, it will be necessary to soak the skins in a solution of corrosive sublimate, in alcohol or whiskey, allowing them to remain from one day to several weeks, according to the size. After removal, the hair must be thoroughly washed or rinsed in clean water, to remove as much as possible of the sublimate; otherwise, exposure to light will bleach all the colors.

In some instances, large skins may be preserved by being salted down in casks.

With regard to the tails of mammalia, it may be well to remark that in some it can never be forced off in the common way of doing this operation. This is particularly the case with *beavers*, *opossums*, and those species which use their tail for prehension or locomotion. Here the tail is usually supplied with numerous tendinous muscles, which require it to be skinned by making a cut along the lower surface or right side of that organ, nearly from one end to the other, and removing the bone and flesh. It should then be sewed up again, after a previous stuffing.

WONDERS OF SCIENTIFIC RESEARCH.

WHAT mere assertion will make any one believe that in one second of time, in one beat of the pendulum of a clock, a ray of light travels over 192,000 miles, and would therefore perform the tour of the world in about the same time that it requires to wink with our eyelids, and in much less than a swift runner occupies in taking a single stride? What mortal can be made to believe without demonstration, that the sun is almost a million times larger than the earth? and that, although so remote from us that a cannon-ball shot directly towards it, and maintaining its full speed, would be twenty years reaching it, it yet affects the earth by its attraction in an inappreciable instant of time? Who would not ask for demonstration, when told that a gnat's wing, in its ordinary flight, beats many hundred times in a second, or that there exist animated and regularly organized beings, many thousands of whose bodies, laid close together, would not extend an inch? But what are these to the astonishing truths which modern optical inquiries have disclosed, which teach us that every point of a medium through which a ray of light passes is affected with a succession of periodical movements, regularly occurring at equal intervals, no less than five hundred millions of millions of times in a single second!—that it is by such movements communicated to the nerves of our eyes that we see!—nay, more, that is the difference in the frequency of their recurrence which affects us with the sense of the diversity of color!—that, for instance, in acquiring the sensation of redness, our eyes are affected four hundred and eighty-two millions of millions of times, of yellowness five hundred and forty two millions of millions of times, and of violet seven hundred and seven millions of millions of times, per second! Do not such things sound more like the ravings of madmen than the sober conclusions of people in their waking senses? They are, nevertheless, conclusions to which any one may most certainly arrive, who will only be at the trouble of examining the chain of reason by which they have been obtained.—*Herschel*.

THE BIBLE.—The following is an account of the number of books, chapters, verses, words and letters contained in the Old and New Testament :

OLD TESTAMENT.

Number of Books,	39
“ Chapters,	929
“ Verses,	23,214
“ Words,	592,439
“ Letters,	2,728,100

The middle Book is Proverbs.

The middle Chapter is Job XXIX.

The middle Verse would be 2 Chronicles, xx. 17, if there were a verse more, and verse 18, if there were a verse less.

The word *and* occurs 35,543 times.

The word *Jehovah* occurs 6,855 times.

The shortest verse is 1 Chronicles, i. 25.

The 21st verse of the 7th chapter of Ezra contains all the letters of the alphabet.

The 19th of the 2 Kings and the 37th chapter of Isaiah are alike.

NEW TESTAMENT.

Number of Books,	87
" Chapters,	260
" Verses,	7,959
" Words,	181,258
" Letters,	838,580

The middle Book is 2 Thessalonians.

The middle Chapter is Romans XIII. if there were a chapter less, and XIV. if there were a chapter more.

The middle Verse is Acts XVII. 17.

The shortest verse is John XI. 35.

OLD AND NEW TESTAMENT.

Number of Books,	66
" Chapters,	1,189
" Verses,	31,173
" Words,	773,697
" Letters,	8,566,480

The middle Chapter and least in the Bible is Psalms CXVII.

The middle Verse is Psalms CXVIII. 8.

The calculator is said to have occupied *three years* of his life in forming this table!

Reported for the Hingham Journal.

PLYMOUTH COUNTY TEACHERS' ASSOCIATION.

AGREEABLY to the announcement in last week's Journal, the Association met at the Town Hall on Friday, June 10th, and was called to order at half-past ten, by the President, Mr. Lewis Noyes, of Abington. Prayer was offered by Rev. Mr. Dyer, of Hingham. The report of the last meeting was read by the Secretary pro tem. A letter from Mr. R. Edwards, of Salem, was read, resigning his office as Secretary of the Association. A Committee of Criticism was chosen, consisting of Messrs. Hewitt and Fletcher, of Bridgewater, and Misses A. R. Ware, of North Bridgewater, C. Jacobs, of Abington, and E. Bartlett, of Bridgewater.

On motion of Mr. Tillinghast, the Association proceeded to the discussion of the best method of teaching Geography. Remarks were made by Messrs. Tillinghast, Jenks, Boyden and Hewitt, and many sound and interesting views exhibited.

At 12 o'clock the meeting adjourned to the vestry of the Orthodox Church, at which place the ladies of Centre and South Hingham had provided a bountiful collation. James S. Lewis, Esq., presided at the tables, and after a blessing had been invoked by Rev. Mr. Otherman, of N. Chelsea, ample justice was done to the rich viands with which the company were thus generously regaled.

After a few songs from the "Normal Choir" the company separated and again assembled at the Hall. The Committee of Criticism made quite a witty report, in which several of the morning speakers were somewhat severely handled, for alleged indignities committed against our vernacular, contrary to grammatical statute in such case made and provided. The morning discussion was then resumed, and Rev. Messrs. Pope, of Somerville, Otherman, of Chelsea, Messrs. Tillinghast and Boyden, of Bridgewater, and Mr. Lewis, of Hingham, severally favored the Association with their views. The importance of teaching Physical Geography in connection with Political, was warmly insisted on by some of the speakers. Some difference of opinion appeared to be entertained in regard to the utility of teaching young pupils certain facts and phenomena in Geography before they were able to comprehend fully the principles on which they rested.

At three o'clock the Association listened to an address from Rev. Mr. Pope, of Somerville. After a very happy introduction, the reverend gentleman proceeded to speak of the importance and responsibility of the teacher's office. The teacher and school occupy the middle ground between childhood and manhood. They are to assist in solving the great problem, where childhood is the material and true manhood the object.

Various influences, apart from the school and teacher, assisted in the result. School committees, books, home conversation, &c., were spoken of. Instruction at school was necessarily rudimentary. The school was at one end of the lever, and home at the other; and contrary to all dynamic rules, both ends of the lever must be raised at once.

The speaker pleaded earnestly for a nobler estimate of the teacher's calling. Teaching should be made a profession. The practice of employing those who only make teaching a stepping stone to another profession, who "keep school" simply for the dollars and cents, to pay their college bills, was spoken against with considerable severity. *Cheap* teachers ruin schools. He wished teachers to set the nobleness of their office before them, and remember that excellence, in any department, is success. The moral significance of a teacher's life was spoken of, and in this connection the speaker, (formerly himself a resident of the Old Colony,) was pleased to indulge in quite a complimentary

strain of remark in reference to the general character of Plymouth teachers.

In conclusion, preparation for school, and progress in it, were earnestly enjoined on teachers, as the two great objects at which they were to aim.

We have given but a very meagre outline of this very excellent address, which abounded in valuable thought, and happy illustrations, enlivened by occasional flashes of wit and humor, and which was listened to with marked attention.

At the close of the Lecture, the Association adjourned, to meet at Loring Hall, at 8 o'clock, where a lecture was delivered to a very full audience by G. F. Thayer, Esq., of Boston. The subject of Mr. Thayer's lecture was "The Teacher an Example." It was eminently practical, and while any attempt at rhetorical display was disclaimed by the speaker, certainly contained many passages of great power. The duty of teachers to be watchful over their own habits, their manners and morals, was earnestly insisted on. They were to aim to become Christian gentlemen. Many common errors in pronunciation were pointed out, and offences against good breeding not uncommon among the best teachers, were animadverted upon. The lecture, besides being very valuable in matter, was a most beautiful example of correct enunciation.

On Saturday, the Association met at 9, A. M. Prayer was offered by Rev. Mr. Richardson. Report of the Committee of Criticism was made, and the discussion on Geography resumed. Some excellent remarks on the subject were made by Mr. Lewis, of Hingham, and others. The subject of teaching Spelling, was then taken up. Messrs. Jenks, of Middleboro', Hunt, of Newton, and Merritt, of Hingham, made remarks on the subject. The general opinion seemed to be in favor of teaching this branch by written exercises in preference to oral, from which opinion Mr. Tillinghast, of Bridgewater, was understood to dissent.* The *age* at which children should commence attending school drew out some remarks from Rev. Messrs. Stearns and Dyer, of Hingham, Rev. Mr. Walker, of Abington, and others. Mr. Jenks thought children should not enter school till at least *eight* years of age. The practice of sending *infants* to school to be confined six hours per day, and to be kept still at that, while the process of cramming their heads with incomprehensible matter, if pertinaciously persevered in, was strongly reprehended by the speakers. Rev. Mr. Walker advocated the plan of gymnasiums for young children, where the healthy development of their physical powers might be secured, instead of the present system of schools in which the mind is developed at

* If we understood Mr. Tillinghast, he was rather in favor of a judicious blending of the two methods.—ED. TEACHER.

a fearful expense of future ill health, from undue confinement and restricted exercise. Pending this discussion the meeting adjourned.

In the afternoon session, the first business was listening to the Critic's report, which cut right and left, in quite a merciless manner. A Committee on Resolutions, consisting of Messrs. Jenks, Boyden and Hunt, was appointed.

At 3 o'clock, the closing lecture of the session was given by Rev. J. P. Terry, of South Weymouth. The speaker dwelt much on the importance of moral education, as being the foundation of all other. Religion was the great want of the human mind, and all education should have reference to it. Parents were earnestly appealed to in regard to the moral education of their children. Thoroughness in education, the harmonious development of the whole nature, was needed. Rules should not be taught so much as principles. Knowledge should be made practical. The present condition of juvenile society showed that the manners and morals of the young were too much neglected both by parents and teachers. The lecturer closed with an earnest appeal to parents and teachers to be faithful to their obligations. The picture they were painting was for all time. Nay, its coloring would last through eternity.

After the lecture, the Committee on Resolutions reported the following, which were unanimously adopted:—

Resolved, That the thanks of this Association be tendered to the Fall River Railroad Company, for their liberality in furnishing half price tickets to persons passing over their road to the Convention.

Resolved, That the thanks of this Association be presented to Richard Edwards, Esq., our late Secretary, for the fidelity with which he has performed the numerous and arduous duties of his office.

Resolved, That the thanks of this Association be presented to Rev. A. R. Pope, Gideon F. Thayer, Esq., and Rev. J. P. Terry, for the excellent lectures with which they have favored us.

Resolved, That our hearty thanks are due to the citizens of Hingham, for their prompt and liberal action in securing for our use the very pleasant and convenient halls in which we have held our meetings, and to those citizens who gratuitously furnished the means of conveyance from the depot to the Town Hall.

Resolved, That the warmest thanks of the Association be tendered to the ladies of Centre Hingham, for the richly prepared collation furnished by them during the intermission of the first day, and likewise to the citizens generally, for the very generous hospitality extended to the members of the Association during their pleasant sojourn with them, while we regret that all who were expecting guests could not have the pleasure of entertaining them.

Resolved, That the local Committee of Arrangements have done themselves and the town great honor by the prompt and skilful manner in which they have discharged the laborious duties of their office.

The remaining time of the Association was mostly occupied by Mr. Jenks, who by request, gave a short lecture on Natural History — more particularly Entomology, a branch for which the gentleman has great enthusiasm, and which he is abundantly able to discuss. Some specimens of Coleoptera, he had just collected, were exhibited. Mr. Jenks's cabinet of natural history, at his school in Middleborough, is quite extensive and varied, and exhibits abundant proofs of his indefatigable industry and enthusiasm in this interesting study.

The hour for adjournment having arrived the assembly united in singing Old Hundred, and the session closed.

The attendance from abroad was not near so large as had been anticipated, ample provision having been made for the entertainment of at least three hundred and fifty strangers, while not near half that number were present. Those who were here were unanimous in their expressions of gratification at the attentions they received and the pleasure they derived from their visit to this ancient town. Hon. Solomon Lincoln accompanied a large number to the "Old Church," and entertained them with several interesting historical reminiscences connected with its early history, for which they would express their thanks.

We have thus given a very imperfect sketch of what was, we think, to all who attended it, a very pleasant and profitable meeting. We hope that the cause of public instruction in the town will receive a new impetus from the gathering, and that parents and teachers will take hold of the important work of education with renewed zeal, and that Hingham Schools will ere long be quoted as examples of progress and thorough instruction.

M.

Hingham, June 17th, 1853.

Resident Editors' Table.

GEORGE ALLEN, Jr., *Boston*, } RESIDENT EDITORS. { ELBRIDGE SMITH, *Cambridge*.
C. J. CAPEN, *Dedham*, } { E. S. STEARNS, *W. Newton*.

SEPARATION OF THE SEXES IN SCHOOLS.

WE insert the Report of a Committee lately appointed by the Board of School Committee of the Charlestown schools, to consider the subject of the "Separation of the Sexes in Schools." It will doubtless be read with interest. We hope, however, to see the other side of the question properly presented by its advocates, in a future number of the Teacher, and would solicit the communications of such as may feel inclined to write upon the subject.

To the Chairman of the Trustees of the Charlestown Free Schools:

A majority of the Committee to whom was referred the petition of William Eager and one hundred and seventy-five others, residents in the Harvard School district, praying that "the details of the Regulations of the School Committee be so altered as to allow the girls to occupy one hall in the Harvard School-house, and the boys the other, under their respective teachers," beg leave to submit the following Report:—

As the petitioners had said in their petition that there were objections to the present arrangement of the Harvard School of a strong, serious, and decisive character, without specifying in any way what those objections were, it was decided at the first meeting of your Committee, to request the petitioners to hand in a written statement of these objections. A letter, previously prepared by the Chairman of the Committee, was accordingly addressed to Mr. William Eager, whose name was at the head of the petitioners. It was also agreed to send a circular which had been prepared by the Chairman of the Committee, to the masters of the Grammar Schools of the city, requesting, in a series of questions, their opinions of the result of the change in the arrangement of the schools. Copies of the letter to Mr. Eager, and of the circular to the masters, are herewith given, and they, together with the "brief summary of reasons," handed in by the petitioners in reply to the letter to Mr. Eager, and the answers of the several masters to the circular, are annexed hereto and made a part of this report.

In the consideration of the subject matter of the petition, the majority of your Committee have endeavored to examine candidly the arguments in favor of, and those against, the present arrangement of the Grammar Schools in this city, and of the old arrangement, to which, for convenience' sake, they have given the names of the Mixed System, and the Separate System; and they have come to their conclusion partly from those reasons which the nature of the case must suggest to every one; partly from their personal experience in schools and in the oversight of schools, and partly from the authority and experience of teachers and friends of education. This authority and experience must be coëxtensive with the spread of education and the existence of teachers. But this it would be impossible, even if it were desirable, to obtain. That which the majority of your Committee would now present to the Board, consists of the replies of the masters of the Grammar Schools in this city to the circular of your Committee, and the answers of some of the masters of the Salem schools, to a communication from a member of your Committee. The reply of a gentleman of Boston, of much experience in education, to a similar communication, is also given. It should, however, be stated that the only *written* authority of teachers, &c., before the *whole* Committee, was that of the masters of the Grammar Schools in this city, although the substance of the opinions of the Salem teachers, as derived from personal interviews with them, was mentioned in committee. The letters, the replies to which are herewith presented for the information of the Board, and connected by the majority of the Committee with their report, were addressed to the Salem teachers after the last meet-

ing of the whole Committee, in order to present their opinions to the Board in an authentic and definite form; and letters were sent to the Salem teachers particularly, because mixed schools have been for a long time in operation in that city, a place in many respects like Charlestown.

As these letters are all before your Board, and as they will be read for your information, the majority of your Committee do not think it necessary to state in detail the different means of information which the different teachers have had, or the different conclusions to which they arrive. The majority of your Committee would only say generally, and once for all, that in their opinion, both as respects more extended sources of information and a larger experience, the weight of authority is decidedly against the mixed system, and in favor of the separate system.

The arguments adduced in favor of the mixed system are, that it favors discipline, making the schools more easy to be governed;—that it stimulates both sexes to exertion and increases the amount of study, and that it renders both sexes more chaste and circumspect in their language, and more attentive to their dress and personal appearance.

This statement embraces, so far as the majority of your Committee recollect, the arguments in favor of the mixed system, and these they purpose to examine briefly, in detail.

And first as regards discipline. It cannot be said that heretofore the discipline has been bad in the schools of Charlestown, or that good order is not now kept in the schools of Boston, and of other places where the separate system prevails. The first thing to be taught in any school is obedience. The master who does not teach obedience, or who fails in government, is not fit to be a master. Obedience must be taught as a fixed principle and rule, and must be required unhesitatingly and implicitly of all scholars, whether boys or girls, whether in mixed or in separate schools. The argument, then, that the mixed system favors discipline, has little or no weight in settling the question at issue, for perfect discipline can be kept, and is kept in separate schools, and the difficulties in the way of discipline are such that a teacher who could not keep a separate school in discipline, could not control a mixed school. Indeed, the argument does not state that the mixed system is *necessary* to discipline, but only that it *favors* discipline. On this point, the majority of your Committee believe that the mixed system renders the discipline more difficult, for two reasons. It gives incitement and opportunity for the commission of offences which are the inevitable result of the union of the sexes in the same room, that would never be thought of in separate schools, and at the same time it makes the punishment of all offences more difficult, from the different modes of discipline necessary for the two sexes. If a boy and girl commit the same offence, it may be necessary to use the rod upon the boy, while a different punishment would produce the desired effect upon the girl. If the teacher makes a difference between the sexes in the punishment of the same offence, he is accused of partiality, and the punishment loses most of its effect; while if he makes the flesh of the girl quiver under the rod or the ferule, he is liable to be charged with undue severity. The majority of your Committee would subject

neither the discipline of the schools to such peril, nor the masters to such an unpleasant alternative.

Secondly. The argument that it stimulates both sexes to exertion and increases the amount of study, is thought to be untrue in its full extent, and it is considered one that, from the necessary evils consequent upon it, should have no decisive influence in favor of the mixed system. The argument must be founded upon this,—that the best scholars of a class help on the poorer ones, and that as a general rule, girls of a certain age are quicker to learn and better scholars than boys of the same age, and so, if put in a class of boys, will aid the class. The principle here stated is undoubtedly correct, but it is incorrectly applied. Good scholars in a class do help the poorer ones; but it is not necessary that all the good scholars should be girls, and that the poor ones should be boys; nor is it invariably the case that the good scholars are girls and that the poor ones are boys. The working of the principle is as satisfactory and as advantageous, when the two grades of scholars in a class are of the same sex, as where they are of different sexes; and the reason, in the opinion of the majority of your Committee, why the two grades of scholars may as well be of the same sex, is, that any peculiar influence of the different sexes that may be relied on as the immediate consequence of the mixed system, will fail when the novelty of the affair is worn off, and when the sexes are accustomed to each other's presence from their first entrance into the primary schools. But there is another side to this question. In the same proportion that the boys are helped, the girls will be injured, for the influence is reciprocal; and where the good scholars help the poor ones, the poor ones are a drawback and a weight upon the advancement of the good ones. And, in the opinion of the majority of your Committee, no advantage should be sought for the one sex which brings with it an equal and corresponding evil to the other sex.

The argument that the mixed system makes both sexes more chaste and circumspect in their language, must have reference to the deportment of the sexes *out* of the school-room, if it has reference to any thing; for *in* the school-room the only language permitted is that of the recitation, where answers are given to the questions of the master; and it is not easily seen how, in the recitations in schools under the separate system, under the eye and in the hearing of the master, there can be any improprieties of speech or manner which the presence of pupils of the other sex would be necessary to correct or improve. But if the argument has reference to the language of the play-ground or street, the majority of your Committee have not yet been shown how the intermixture of the sexes makes either sex more chaste or circumspect in its language or manners while engaged in the rough plays of thoughtless childhood.

So in regard to the remaining reasons assigned in favor of the mixed system. If the children of the different sexes are neat and attentive to their personal appearance because they are to be seen by the other sex, and for this reason only, a low and unworthy inducement is held out to the sexes for the formation of these important habits, while, as the principle can act only in the presence of the two sexes, it must be inoperative when they are separated, and the opposite habits

might be formed. Besides, it is by no means admitted that habits of neatness cannot be formed in separate schools, and that they have not been so formed in previous years. It is not known that there has been any complaint upon this subject. The majority of your Committee are of opinion that under the mixed system there would be but few, if any, instances in these respects, and they think that it may well be questioned whether the feeling that makes boys or girls, who when in separate schools were untidy and unattentive to their personal appearance, suddenly go to the other extreme, does not arise from a disposition to gallantry which no parent could wish to see fostered in our public schools.

If, as the majority of your Committee believe, the above opinions and reasoning are correct, the arguments adduced in favor of the mixed system are inconclusive, and open to objections which utterly destroy their weight.

But besides, there are objections to the mixed system which the majority of your Committee believe the petitioners have rightly described in their "brief summary of reasons," as being of a strong, serious and decisive character. The majority of your Committee would refer generally to that "brief summary," and will also briefly state the objections to the mixed system which press most strongly and decisively upon their minds.

And first in respect to instruction. The difficulties which present themselves in regard to discipline have been heretofore stated—and now the objections are given in respect to instruction purely. In the opinion of the majority of your Committee a wise plan of education points out a different course of instruction for the different sexes. They believe with the petitioners that girls should not be instructed as though they were to be our "future engineers, merchants, navigators, lawgivers and rulers," but that they should be so taught as to perform appropriately the peculiar duties of their sex. The majority of your Committee do not think it necessary to enlarge upon this point; for they suppose that its truth is generally admitted. Nor do they consider that by the establishment of the High School for advanced scholars, the force of this argument will apply in its full force to a large class of scholars who will, from necessity, receive all their education in the Grammar Schools. And if the course of instruction for the different sexes ought to be different, the separate system is the only one that can be used to advantage. Another difficulty in the schools under the mixed system, will arise from the nature of some of the studies taught. It is thought to be the universal opinion that Physiology, for instance, should be taught to some extent at least in all the Grammar Schools. No prudent teacher would venture to instruct boys and girls in this subject in the same class, or even in the same room.

Secondly, in respect to morals. Here the majority of your Committee think that the effect of the mixed system is decidedly bad. In small schools in towns of sparse population, and even in country villages where the scholars and the parents of the scholars are all known to each other, the evils may be less felt, and more easily corrected. But in the large schools of densely populated maritime cities, which it is alike the boast and glory of our Common School system are open to

all, where children of every grade and those subject to all sorts of influences at home meet together, the evils necessary to the mixed system are greatly increased. The majority of your Committee will state what some of these moral evils are. No one who knows boys, it is thought can deny, that, as a general rule, by the time they reach the age of twelve years, and with many at a much earlier period, they have become familiar with the common words of vulgarity, obscenity and profanity—with the last perhaps to a less extent. How far this evil extends, in reference to the first two vices, to the other sex no definite opinion is ventured, but it is feared that the contamination is more deeply spread than is generally supposed. It is also believed to be true that a large proportion of the words of vulgarity and obscenity have reference to sexual differences; and that these words are nowhere spoken more freely and unblushingly than when children are collected in large numbers as at schools, and they rarely collect in so large numbers elsewhere. The constant, daily presence of the other sex is continually recalling these sexual peculiarities, and the impure ideas associated with them. And certainly in the opinion of the majority of your Committee, neither sex should be unnecessarily exposed to this peril. The impurity will exist, it is to be feared, in separate schools, but it may slumber at times, while in schools under the mixed system, the flame is constantly fed. These evils exist even when no improper words or communications pass between the sexes, and when such communication is had the evil is increased. That such communication is had, even in spite of the vigilance of the most faithful master, it is not doubted. Discoveries are made by the teacher rarely, while the successful instances of deception are known, if not to the school at large, at least to the little coterie around the wrong doer. The effect of these illicit communications both upon discipline and morals is equally demoralizing.

There are other objections to the mixed system which, from their delicacy, cannot be urged in a written report with the precision and distinctness to which they are entitled. The Board cannot fail to perceive, however, that embarrassment to both teachers and pupils may arise from causes over which nature alone has control.

The above conclusions of themselves would be sufficient to convince the majority of your Committee that the prayer of the petitioners should be granted. They also present another consideration for a return to the old or separate system, which, in their opinion, would be conclusive in a case even more nicely balanced than the present, and that is, the wishes, temperately and strongly stated, of so large a proportion of the residents in the Harvard District. Whatever evil may result from the mixed system, will fall on them through their children, and their warning voice should certainly be heard, when they would attempt to avert the impending danger.

The majority of your Committee, therefore, recommend that the prayer of the petitioners be granted, and that the boys occupy one room of the Harvard School house, and the girls the other, under their respective teachers.

Respectfully submitted.

CHAS. W. MOORE, } *Majority of the*
GEO. P. SANGER, } *Committee.*

Charlestown, May 24th, 1848.

We insert the following letter of a teacher to the parents of his pupils. We think the plan a good one. It speaks volumes in favor of the devotedness of the teacher, and it will, no doubt, be attended with deserved success. Let others follow the example.

To the Patrons of the ——— School.

My object in addressing you, is to seek your hearty coöperation in carrying out my plans for the improvement of those committed to my care.

The interests of your children are as dear to you as life itself, and next to yourselves, he who occupies the position of their teacher, if he is of the right spirit, can do most toward advancing their interests.

The earnest desire which I feel for their advancement and the reputation of the school, induces me to call your attention to the *absolute importance of regular and punctual attendance.*

Those who are absent must *lose* the instruction imparted to the others, or else the classes must be retarded, while the teacher goes over the same ground again, as a special favor to the absentee; hence the absence of a child for a *single half-day*, is a matter of *no little consequence.*

Every tardy scholar must disturb the school in entering, and call their attention from study nearly a minute, making in the aggregate, nearly *half an hour.*

It is estimated that the time of children ten or twelve years old, in school, is worth *one dollar per day*, and out of school only *ninapence!*

In view, then, of the good of the school, and the importance of training your children to correct and steady habits, will you not determine that they shall be sent *regularly?* and will you not encourage the learning of at least one lesson *at home?* and, moreover, will you not encourage all our hearts, and cheer us in our arduous toils in pursuit of knowledge by your *frequent visits* to the school-room?

Hoping that these few suggestions may be of use in securing unity of action in our efforts to promote the true interests of the school,

I remain your and your children's friend,

"MAPLETON, OR MORE WORK FOR THE MAINE LAW."

THIS is a novel, which, as its name implies, and as its author in the preface states, is a "contribution to a great reform in morals and legislation." It presents many graphic pictures, and the story is extremely interesting, and is well interwoven with arguments which make it a valuable as well as an interesting work. We have read it with as much satisfaction as we took in poring over the pages of "Uncle Tom." If its scenes are not so highly wrought as many in Mrs. Stowe's work, it certainly appeals more to the reason, and, we think, is calculated to do much good in its chosen sphere. Jenks, Hickling & Swan, are the publishers.

A HIGH SCHOOL ASTRONOMY, in which the Descriptive, Physical and Practical are combined, with special reference to the wants of Academies and Seminaries of Learning. By Hiram Mattison, A. M., Late Professor of Natural History and Astronomy in the Falley Seminary.

We have met with no work for schools which affords so great a variety of useful knowledge on the subject of astronomy as this. The subjects are presented to the young student in a manner perfectly intelligible, and in language calculated to produce vivid and permanent impressions, and are illustrated with numerous diagrams well suited to the blackboard. The author has diversified his work by frequent reference to the views of the most celebrated writers on this and on kindred subjects, and has adapted it to the most modern stage of discovery.

It is printed in large type, an advantage of no ordinary character in school-books of the present day, but to which every publisher should pay due regard, as we are quite certain that committees and teachers, knowing its importance, are not apt to overlook it. The work may be found at Ide & Dutton's, 106 Washington Street, Boston.

THE TEACHER AND THE PARENT. *A Treatise upon Common School Education; containing practical suggestions to teachers and parents.* By Charles Northend, A. M., Superintendent of Public Schools, Danvers, Mass.; late, and for many years, principal of the Epes School, Salem, Mass. Published by Jenks, Hickling & Swan.

WE may anticipate for this work a wide circulation, among teachers and friends of education. The extensive and high reputation of its author, indeed, will bespeak for it more than pen of ours can do. It is a work of about three hundred and twenty pages, in good size type, and presents a very pleasant appearance to the eye, as well as the work noticed on the preceding page, both of which, for their neat appearance, do great credit to the enterprising publishers.

Mr. Northend's book will prove interesting to all, and of great benefit to teachers, especially as a chart for those just commencing to engage in the profession. As a *vade mecum*, it will prove a very pleasant companion, for its pages are filled with the results of a large experience presented in a very pleasing form. We are glad to find that the author, in furnishing to teachers so useful a work, has not neglected the *suaviter in modo*, and has here and there thrown in a pleasant anecdote, which will enliven its character, and make it all the more acceptable. We

shall have frequent occasion to refer to it hereafter. In closing this short notice, we would assure our readers that a perusal of the work will more than realize to them the truth of all we have attempted to say in its favor. Appended to the volume will be found a catalogue of educational works suitable for the teacher's library.

AMERICAN INSTITUTE OF INSTRUCTION.

THE twenty-fourth annual meeting will be held at New Haven, Conn., on the 16th, 17th and 18th of August, 1853.

ORDER OF EXERCISES.

Tuesday.—The Institute will commence the session at 10 o'clock, A. M. After the introductory exercises, a prize essay will be read, "On the means of producing a Symmetrical Development of the Mental Faculties."

At 3 o'clock, P. M., a lecture by J. D. Philbrick, Principal of the State Normal School, New Britain, Conn.

At 7½ P. M., a lecture by F. T. Russell, of Hartford, on "Elocution."

Wednesday.—At 9 A. M., a lecture by Prof. Krusi, of Appenzell, Switzerland, late Professor in the London Home and Colonial Normal Seminary, on "The character of Pestalozzi, and his efforts in the cause of Education."

3 P. M., a prize essay.

7½ P. M., a lecture by Lowell Mason, "On teaching vocal music according to the Principles of Pestalozzi."

Thursday.—9 A. M. Second lecture by Lowell Mason.

3 P. M. Lecture by Henry Barnard, of Hartford, "Practical Lessons to be drawn from an Educational Tour in Europe."

7 P. M. Lecture by Prof. Guyot, of Cambridge, "Method of Teaching Geography."

The Committee recommend a recess of fifteen minutes for social intercourse during each day session, and that the entire afternoon of Thursday, after the lecture, be devoted to the same purpose.

Discussions will succeed the several lectures on topics suggested by them, or on other subjects preferred by the Institute.

Teachers and friends of education generally are invited to attend and participate in the deliberations.

Ladies who attend the meetings may expect the usual accommodations.

Railroad tickets from Boston to New Haven and back, will be furnished in Boston, by W. D. Ticknor, 135 Washington st.,

at half price, good from Saturday, 13th, to Tuesday the 23d of August. Also, from *Worcester* and *Springfield* on the same terms at the ticket offices.

Friends of the Institute who may receive this notice in season, are requested to call the attention of the community to the subject through the press in their vicinity.

SOLOMON ADAMS,

Chairman Com. Arrangements.

CHAS. E. VALENTINE, *Secretary.*

☞ Notice of the place of meeting will be published in the *Boston Journal* and the *Daily Traveller*, and in *New Haven papers*.

PRIZE ESSAYS.

The following Prizes for original Essays are offered by the Massachusetts Teachers' Association :—

To the members of the Association, for the best Essay, on either of the following subjects, a prize of *twenty dollars*.

1. "The importance of increasing the number of Female Teachers qualified to give instruction in the Higher Departments of Education."
2. "The Evils and Remedies of Whispering, or Communicating, in School."

To the female teachers of the State, for the best Essay, on either of the following subjects, a prize of *twenty dollars*.

1. "Best Method of Conducting a Primary School."
2. "Thoroughness in Teaching."

The Essays must be forwarded to the Secretary, *Charles J. Capen, Esq., Latin School, Boston*, on or before the 15th of October. Each Essay should be accompanied by a sealed envelope, enclosing the name of the writer. The envelopes accompanying the unsuccessful Essays will not be opened. The prizes will be awarded by an impartial Committee; but no prize will be awarded to an Essay that is not deemed worthy of one. The successful Essays will be regarded as the property of the Association.

W. H. WELLS, *President.*

Newburyport, April 18, 1853.